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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,805	11/20/2003	Lorenzo Parrini	132702-0098	8662

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EXAMINER	
KRUER, STEFAN	
ART UNIT	**PAPER NUMBER**
3654	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/717,805	PARRINI, LORENZO	
	Examiner	Art Unit	
	Stefan Kruer	3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 - 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Angelis (5,566,786) in view of LaNieve et al (5,437,899).

In Claims 1, 3, 4 and 6 - 9, De Angelis discloses an elongated load-bearing support device (1) with load bearing strands (4), each having a plurality of fibers (5) of a base material in a first phase (aramid fibers (Col. 2, Line 38)) and the strands being surrounded by a sheath (7). The reinforcing material of De Angelis is of a second phase, yet it is externally applied to the base material as "... an impregnating medium, for example polyurethane solution, for the protection of the fibers 5" (Col.3, Line 57) whereby the bending fatigue strength of the strands is increased.

Attention is directed to LaNieve et al, as cited for reference in previous office actions, teach, "... polymers have been mixed with particulate matter and made into fibers..." (Col. 1, Line 54), whereby the particulate matter of their invention being "...an elemental metal or metal alloy, or may be nonmetallic..." (Col. 6, Line 14), whereby their polymer is an aromatic polyamide known as aramid. La Nieve et al teach further that such addition of particulate matter will enhance the flexural strength (modulus of elasticity in shear) of the fiber, with a minimized reduction in loss of tensile strength.

It would have been obvious to one of ordinary skill in the art to modify the base material of De Angelis with the teaching of LaNieve et al, in order to gain the features of materials of high flexural strength for applications whereby the material is to maintain a load while experiencing frequent/continuous radial deflection, for safety and durability.

In Claim 2, De Angelis discloses his strands having a plurality of fibers (5) formed into a cable (4 and, in total, 1).

In Claims 5 and 10, as noted above, LaNieve at al teach a reinforcing material as particulate matter, such as platelets and needles (Col. 6, Line 35).

Regarding Claims 11 – 15, the devices of Claims 1 – 10 would necessarily have to be formed in order to function. It would have been obvious to perform all the method steps of claims 11-15 when producing the device of De Angelis as modified by LaNieve et al above, in a usual and expected fashion, in as much as the method claims recite no limiting steps beyond producing each of the components.

In Claim 11, De Angelis, discloses an elongated load-bearing support device (1) with fibers (5) from a base material in a first phase (aramid fibers) and a reinforcing material in a second phase ("... an impregnating medium, ...polyurethane solution), with the load-bearing strands (4) thereof being surrounded by a sheath (7).

LaNieve et al teach further "... polymers have been mixed with particulate matter and made into fibers..."

In Claim 12, De Angelis and LaNieve et al disclose a base material selected from aramid.

In Claim 13, De Angelis discloses a reinforcing means by impregnation with a polyurethane solution to increase the bending fatigue strength of the base material, whereas LaNieve et al teach a reinforcing material as "...an elemental metal or metal alloy..." which is used to fill their base material.

In Claim 14, La Nieve et al teach further that addition of particulate matter will enhance the flexural strength (modulus of elasticity in a radial direction).

In Claim 15, LaNieve at al teach a reinforcing material as particulate matter, such as platelets and needles.

Response to Arguments

Applicant's arguments filed 5 April 2007 with respect to Claim 1 have been fully considered but they are not persuasive.

As noted above and reviewed in the previous office action, La Nieve teaches the enhancement of his shear strength at a minimized cost to his tensile strength, thereby increasing a modulus of elasticity of his strands in a radial direction.

Emphasis with respect to the directional properties of composite materials, in particular to the orientation and type/form of reinforcing material, is herein made.

Neither the original claim language nor the amended claim language overcame the rejections based on the prior art of record of the previous office action.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sandt (5,576,081), Oleson et al (4,956,039) and Mott (*Applied Strength of Materials*, 4th Ed.) are cited for an elongated structural element filled with a polymer binder in liquid form with a dispersion of fiber reinforcement material; a cable-like composite body comprising a thermoplastic sleeve that "...is preferably filled with reinforcement elements having a high modulus of elasticity..." as well as a core string comprising a thermoplastic material with filaments of "...preferably E-.. S-glass..."; and a brief overview of composite structures addressing the impact of the amount, type, structure and orientation of reinforcing materials on both strength and modulus of elasticity, respectively.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Kruer whose telephone number is 571.272.5913. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Crawford can be reached on 571.272.6918. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866.217.9197 (toll-free).

SHK
17 April 2007

GENE C. CRAWFORD
SUPERVISORY PATENT EXAMINER